

NAME

Key

DATE

PERIOD

3-2 Practice

Angles and Parallel Lines

In the figure, $m\angle 2 = 92$ and $m\angle 12 = 74$. Find the measure of each angle.

1. $\angle 10$ 92

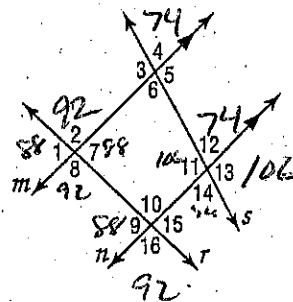
2. $\angle 8$ 92

3. $\angle 9$ 88

4. $\angle 5$ 106

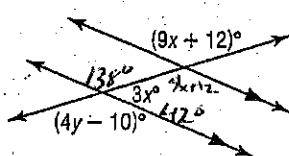
5. $\angle 11$ 106

6. $\angle 13$ 106



Find x and y in each figure.

7.



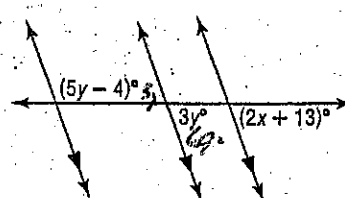
$$3x + 9x + 12 = 180$$

$$12x + 12 = 180$$

$$12x = 168$$

$$x = 14$$

8.



$$2x + 13 = 69$$

$$2x = 56$$

$$x = 28$$

$$3y + 5y - 4 = 180$$

$$8y = 184$$

$$y = 23$$

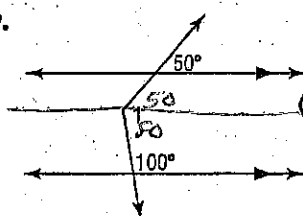
$$4y - 10 = 138$$

$$4y = 148$$

$$y = 37$$

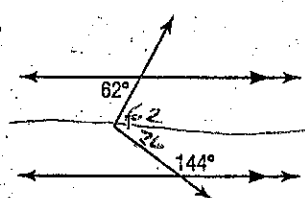
Find $m\angle 1$ in each figure.

9.



$$m\angle 1 = 130$$

10.



$$62$$

$$+ 36$$

$$98^\circ$$

11. PROOF Write a paragraph proof of Theorem 3.3.

Given: $\ell \parallel m, m \parallel n$

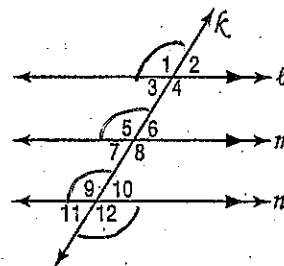
Prove: $\angle 1 \cong \angle 12$

① ~

① Given

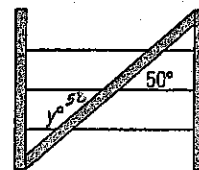
② $\angle 1 \cong \angle 5$ ② If \parallel , corr \angle s \cong ③ $\angle 5 \cong \angle 9$ ③ If \parallel , corr \angle s \cong ④ $\angle 9 \cong \angle 12$ ④ Vert. \angle s \cong ⑤ $\angle 1 \cong \angle 12$

⑤ Transitive



12. FENCING A diagonal brace strengthens the wire fence and prevents it from sagging. The brace makes a 50° angle with the wire as shown. Find y .

$$y = 130$$



3-4 Skills Practice

Equations of Lines

Write an equation in slope-intercept form of the line having the given slope and y-intercept.

1. $m: -4, y\text{-intercept: } 3$

$$y = -4x + 3$$

3. $m: \frac{3}{7}, (0, 1)$

$$y = \frac{3}{7}x + 1$$

2. $m: 3, y\text{-intercept: } -8$

$$y = 3x - 8$$

4. $m: -\frac{2}{5}, (0, -6)$

$$y = -\frac{2}{5}x - 6$$

Write equations in ~~point-slope form~~ and slope-intercept form of the line having the given slope and containing the given point.

5. $m: 2, (5, 2)$

$$y = 2x + b$$

$$2 = 2(5) + b$$

$$-8 = b$$

$$y = 2x - 8$$

7. $m: -\frac{1}{2}, (-2, 5)$

$$y = -\frac{1}{2}x + 4$$

$$y = -\frac{1}{2}x + b$$

$$5 = -\frac{1}{2}(-2) + b$$

$$5 = 1 + b$$

$$4 = b$$

6. $m: -3, (2, -4)$

$$y = -3x + 2$$

$$y = -3x + b$$

$$-4 = -3(2) + b$$

$$2 = b$$

8. $m: \frac{1}{3}, (-3, -8)$

$$y = \frac{1}{3}x - 7$$

$$y = \frac{1}{3}x + b$$

$$-8 = \frac{1}{3}(-3) + b$$

$$-8 = -1 + b$$

$$-7 = b$$

Write an equation in slope-intercept form for each line.

9. r $y = x + 3$

10. s $b = 2$
 $m = -2$

$$y = -2x + 2$$

11. t $b = -3$
 $m = 3$

$$y = 3x - 3$$

12. u $b = 5$
 $m = \frac{1}{3}$

$$y = \frac{1}{3}x + 5$$

13. the line parallel to line r that contains $(1, -1)$

$$m = 1$$

$$y = x + b \rightarrow -1 = 1 + b$$

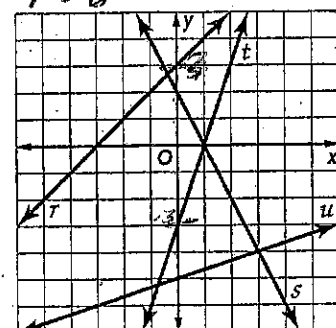
$$-2 = b$$

$$y = x - 2$$

14. the line perpendicular to line s that contains $(0, 0)$

$$m = \frac{1}{2}$$

$$y = \frac{1}{2}x$$



Write an equation in slope-intercept form for the line that satisfies the given conditions.

15. $m = 6, y\text{-intercept} = -2$

$$y = 6x - 2$$

17. $m = -1, \text{ contains } (0, -6)$

$$y = -x - 6$$

19. contains $(2, 0)$ and $(0, 10)$

$$m = \frac{10-0}{0-2} = \frac{10}{-2} = -5$$

 $\uparrow y\text{-int}$

$$y = -5x + 10$$

16. $m = -\frac{5}{3}, y\text{-intercept} = 0$

$$y = -\frac{5}{3}x$$

18. $m = 4, \text{ contains } (2, 5)$

$$y = 4x + b$$

$$5 = 4(2) + b \rightarrow b = -3$$

$$y = 4x - 3$$

20. x-intercept is $-2, y\text{-intercept is } -1$

$$(-2, 0) (0, -1)$$

$$m = \frac{-1-0}{0-(-2)} = \frac{-1}{2}$$

$$y = -\frac{1}{2}x - 1$$